

CLAIMS

1. A method for creating photo-quality image with an ink-jet ink comprising:

(a) providing an inorganic porous media substrate;

5 (b) providing an aqueous ink-jet ink comprising an ink vehicle and an effective amount of a metallized dye having at least one heterocyclic nitrogen ring and an azo bond wherein the heterocyclic nitrogen is chelated or complexed to a transition metal; and

10 (c) jetting the aqueous ink-jet ink onto the
inorganic porous media substrate.

2. A method as in claim 1 wherein the metallized dye comprises a pyridine group bonded to a quinolinol group through an azo bond.

3. A method as in claim 2 wherein the metallized dye is in a dicarboxalate form.

20 4. A method as in claim 1 wherein the metallized dye comprises a pyridine group bonded to a naphthalene group through an azo bond.

5. A method as in claim 1 wherein the porous media
25 is a paper substrate having coated thereon an inorganic
coating selected from the group consisting of silica,
alumina, and combinations thereof.

6. A method as in claim 1 wherein the inorganic
30 porous media substrate has a pore size ranging from about
5 to 30 nanometers in width.

7. A method as in claim 1 wherein the transition metal is selected from the group consisting of nickel, copper, iron, cobalt, and combinations thereof.

5 8. A method as in claim 1 wherein the metallized dye is present in the aqueous ink-jet ink at from 0.1% to 10% by weight.

9. A method as in claim 1 wherein the metallized
10 dye has a ligand to transition metal molar ratio of 1:1.

10. A method as in claim 1 wherein the metallized dye has a ligand to transition metal molar ratio of 2:1.

15 11. An photo-quality image on a substrate comprising:

(a) a porous media substrate; and

(b) an image on the substrate provided by an aqueous
20 ink-jet ink comprising an ink vehicle, and a metallized dye having a heterocyclic nitrogen and an azo bond wherein the heterocyclic nitrogen is chelated or complexed to a transition metal.

25 12. An image on a substrate as in claim 11 wherein the metallized dye comprises a pyridine group bonded to a quinolinol group through an azo bond.

30 13. An image on a substrate as in claim 12 wherein the metallized dye is in a dicarboxalate form.

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image on a substrate as in claim 1, wherein the dye comprises a pyridine group through an azo bond.

image on a substrate as in claim 1, wherein the media substrate is a paper substrate.

image on a substrate as in claim 1, wherein the inorganic coating selected from silica, alumina, and combinations thereof.

image on a substrate as in claim 1, wherein the media substrate has a pore size of 10 nanometers in width.

image on a substrate as in claim 1, wherein the metal is selected from the group consisting of nickel, copper, iron, cobalt, and combinations thereof.

image on a substrate as in claim 1, wherein the dye is present in the aqueous solution from 1% to 10% by weight.

image on a substrate as in claim 1, wherein the dye has a ligand to transition metal.

image on a substrate as in claim 1, wherein the dye has a ligand to transition metal.

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30 ratio of 2: